Atty. Dkt. No. 038602-0393

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gregory D. PLOWMAN, et al.

Title: DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS

Appl. No.: 09/095,478

Filing Date: June 10, 1998

Examiner: T. Gaputa

Art Unit: 1642

LETTER

Tony Gaputa
Washington, D.C. 20231

Sir:

Per our telephone conversation of September 21, 2001, enclosed please find the following documents pertaining to the above-referenced application:

1. Office Action dated January 20, 2000;

2. Notice of Abandonment dated April 26, 2000;

3. Response to Office Action filed May 12, 2000;

4. Revocation of Prior Powers of Attorney and Appointment of New Power of Attorney by Assignee Change of Correspondence Address, Change of Correspondence Address and Status Inquiry filed May 14, 2001.

The final date for response to the January 20, 2000 Office Action was July 20, 2000, so the May 12, 2000 submission was timely filed. If you have any questions or need additional information, please feel free to contact me. Thank you for your prompt attention to this matter.

Respectfully submitted,

Date Oct 10, 2001 By _____

FOLEY & LARDNER
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5109
Telephone: (202) 672-5475
Facsimile: (202) 672-5399

Beth A. Burrous
Attorney for Applicant
Registration No. 35,087

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/095,478	06/10/98	GREGORY D. F	235/056

022249 HM22/0120

LYON & LYON LLP
SUITE 4700
633 WEST FIFTH STREET
LOS ANGELES CA 90071-2066

EXAMINER	
SUN HOFFMAN, L	
ART UNIT	**PAPER NUMBER**
1642	8

DATE MAILED: 01/20/00

Awat due: 2·20·00
PWA SGQ REQ due: 2·20·00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

RECEIVED
OCT 11 2001
TECH CENTER 1600/2900

RECEIVED
JAN 31 2000
S.D. PROSECUTION

RECEIVED
JAN 24 2000
U.S. PROSECUTION

Office Action Summary

Application No.	Applicant(s)
09/095,478	Plowman et al.
Examiner	**Group Art Unit**
Lin Sun-Hoffman	1642

☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *1* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *2-5, 7, 9, and 23-34* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☐ Claim(s) _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims *2-5, 7, 9, and 23-34* are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 **U.S.C.** § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Election/Restriction

1. Applicants' response of election is acknowledged. However, Applicant failed to response the requirement for election of PTP10 or PTP05 depicted in previous Office Action mailed on 10/4/99. Further election of the polynucleotide sequences that direct to either PTP 05 or PTP10 is required.

Sequence Compliance

2. Applicants have submitted a computer readable form of the sequence listing, however, the sequences present in SEQ. ID NO: 5-7 in computer readable forms are not compatible with the claimed the region. SEQ. ID NO: 5 has only 122 amino acids; SEQ. ID NO: 6 has only 354 amino acids; and SEQ. ID NO: 7 has only 381 amino acids.

Since the above-mentioned reply appears to be *bona fide*, applicants are given a TIME PERIOD of **ONE (1) MONTH** or **THIRTY (30) DAYS**, from the mailing date of this notice, whichever is longer, within which to supply the omission or correction in order to avoid abandonment. EXTENSIONS OF THIS TIME LIMIT MAY BE GRANTED UNDER 37 CFR 1.136(a).

Any inquiry concerning this communication should be directed to Examiner Lin Sun-Hoffman, Ph.D., Art Unit 1642, whose telephone number is (703)308-7552. Any inquiry of a general nature or relating to the status of this application should be directed to the Group

receptionist whose telephone number is (703) 308-0196. Any questions regarding compliance with the sequence rules requirements specifically should be directed to the departments listed at the bottom of the Notice to Comply.

Lin Sun-Hoffman, Ph.D.

Jan. 11, 00.

PAULA K. HUTZELL
SUPERVISORY PATENT EXAMINER

Application No. 09/095487

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- [X] 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to these regulations, published at 1114 OG 29, May 15, 1990 and at 55 FR 18230, May 1, 1990.
- [ ] 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- [ ] 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- [ ] 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
- [ ] 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- [X] 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- [X] 7. Other: Please provide Seq ID # 5-7

Applicant Must Provide:

- [X] An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- [X] An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- [X] A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216
For CRF Submission Help, call (703) 308-4212
For PatentIn software help, call (703) 308-6856

PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR RESPONSE

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

KD

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/095,478	06/10/98	GREGORY D.	P 235/054

022249
LYON & LYON LLP
SUITE 4700
633 WEST FIFTH STREET
LOS ANGELES CA 90071-2066

HM22/0426

EXAMINER	
SUN HOFFMAN, L	
ART UNIT	**PAPER NUMBER**
1642	9

DATE MAILED: 04/26/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Notice of Abandonment

Application No.	Applicant(s)
09/095,478	Plowman et al.
Examiner	**Group Art Unit**
First Last	1234

This application is abandoned in view of:

☒ applicant's failure to timely file a proper response to the Office letter mailed on *Jan 20, 2000* .

☐ A response (with a Certificate of Mailing or Transmission of _____) was received on _____ , which is after the expiration of the period for response (including a total extension of time of ____ month(s)) which expired on _____ .

☐ A proposed response was received on _____ , but it does not constitute a proper response to the final rejection.

(A proper response to a final rejection consists only of: a timely filed amendment which places the application in condition for allowance; a Notice of Appeal; or the filing of a continuing application under 37 CFR 1.62 (FWC)).

☒ No response has been received.

☐ applicant's failure to timely pay the required issue fee within the statutory period of three months from the mailing date of the Notice of Allowance.

☐ The issue fee (with a Certificate of Mailing or Transmission of _____) was received on _____ .

☐ The submitted issue fee of $_____ is insufficient. The issue fee required by 37 CFR 1.18 is $_____ .

☐ The issue fee has not been received.

☐ applicant's failure to timely file new formal drawings as required in the Notice of Allowability.

☐ Proposed new formal drawings (with a Certificate of Mailing or Transmission of _____) were received on _____ .

☐ The proposed new formal drawings filed _____ are not acceptable.

☐ No proposed new formal drawings have been received.

☐ the express abandonment under 37 CFR 1.62(g) in favor of the FWC application filed on _____ .

☐ the letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.

☐ the letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.

☐ the decision by the Board of Patent Appeals and Interferences rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.

☐ the reason(s) below:

NANCY A. JOHNSON, PH.D
PRIMARY EXAMINER

Patent
235/054

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Gregory Plowman, et al.

Serial No.: 09/095,478

Filed: June 10, 1998

For: **DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS**

Group Art Unit: 1642

Examiner: Lin Sun-Hoffman

Copy to Lin Sun-Hoffman

TRANSMITTAL LETTER

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Transmitted herewith for filing in the above-referenced application are the following:

- Response to Office Action;
- Statement Under 37 C.F.R. § 1.821 (F);
- Submission of Sequence Listing;
- Sequence Listing on ASCII formatted diskette;
- Petition for Extension of Time;
- Return postcard.

CERTIFICATE OF MAILING
(37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Ruth Saskowski
Name of Person Mailing Paper

May 12, 2000
Date of Deposit

Signature of Person Mailing Paper

Also enclosed is a check for the total amount of $870.00 as required by 37 CFR § 1.17 (a) for the petition fee. If the enclosed fee is incorrect, please charge or credit our Deposit Account No. 50-1273 for the appropriate amount.

Respectfully submitted,

BROBECK, PHLEGER & HARRISON LLP

Dated: 5/12/00

By: _____
Michael A. Whittaker
Reg. No. 46,230

BROBECK, PHLEGER & HARRISON LLP
12390 El Camino Real
San Diego, California 92130
Telephone: (858) 720-2500
Facsimile: (858) 720-2555

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Plowman et al.

Serial No.: 09/095,478

Filed: June 10, 1998

For: DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS

Group Art Unit: 1642

Examiner: Lin Sun-Hoffman

RESPONSE TO OFFICE ACTION

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Office Action mailed January 20, 2000 ("Paper No. 8"), please consider the following remarks.

SUMMARY

Claims 2-5, 7, 9, and 23-24 are currently pending in the application.

RESTRICTION REQUIREMENT

In Paper No. 8, the Examiner has required that one of PTP10 or PTP05 be elected for prosecution. Applicants hereby elect PTP10.

305644

Certificate of Mailing
(37 C.F.R. § 1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Ruth Saskowski
Name of Person Mailing Paper

5/12/00
Date of Deposit

Signature of Person Mailing Paper

SEQUENCE COMPLIANCE

The Examiner states that the computer readable and paper forms of the sequence listing previously filed by Applicants are not compatible. Applicants submit herewith a substitute copy of both the paper and computer readable forms, together with the required statement under 37 C.F.R. § 1.821.

CONCLUSION

Applicants respectfully submit that the pending claims are in condition for allowance. An early notice to that effect is earnestly solicited. Should any matters remain outstanding, the Examiner is encouraged to telephone the undersigned at (858) 720-2500 so that they may be resolved without the need for additional action and response thereto.

Respectfully submitted,
Brobeck, Phleger & Harrison LLP

Dated: 5/12/00

By: _____
For Richard J. Warburg,
Michael A. Whittaker
Registration No. P-46,230

12390 El Camino Real
San Diego, CA 92130
Telephone: (858) 720-2500

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Gregory Plowman, et al.

Serial No: 09/095,478

Filed: June 10, 1998

For: DIGANOSIS AND TREATMENT OF PTP RELATED DISORDERS

Group Art Unit: 1642

Examiner: Hoffman, L.

STATEMENT UNDER 37 C.F.R. § 1.821 (F)

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

I hereby state that the content of the paper and computer readable copies of the Sequence Listing, submitted in accordance with 37 C.F.R. § 1.821 (e), (f) and (g), or § 1.825 (d) and (b) respectively, are the same.

Respectfully submitted,

Brobeck, Phleger & Harrison LLP

Dated: 5/12/00

By: _____
Michael A. Whittaker
Reg. No. 46,230

12390 El Camino Real
San Diego, California 92130-2081
Telephone: (858) 720-2500
Facsimile: (858) 720-2555

CERTIFICATE OF MAILING
(37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Ruth Saskowski
Name of Person Mailing Paper

5/12/00
Date of Deposit

_____
Signature of Person Mailing Paper

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Group Art Unit: 1642
Gregory Plowman, et al.	Examiner: Hoffman, L.
Serial No. 09/095,478	
Filed: June 10, 1998	
For: **DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS**	

SUBMISSION OF SEQUENCE LISTING

Responsive to the Communication mailed January 20, 2000, Applicants submit herewith the "Sequence Listing" in paper copy and in computer readable form as required under § 1.824 (a).

The Sequence Listing is provided in ASCII text on the accompanying diskette and the Statement Under 37 C.F. R. § 1.821 (f) is also provided. A copy of the Notice to Comply is attached to this Response.

CERTIFICATE OF MAILING (37 C.F.R. § 1.8a

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Ruth Saskowski
Name of Person Mailing Paper

5/12/00
Date of Deposit

Signature of Person Mailing Paper

Please amend the specification by entering the enclosed Sequence Listing. The Sequence Listing was generated from the specification, Figures 1A, 1B and does not constitute new matter.

Pursuant to 37 CFR § 1.136 (a), applicants submit herewith petition for a three month extension of time. This extension of time is effective to allow timely filing of this response up to and including May 20, 2000.

Also enclosed is a check for the total amount of $870.00 as required by 37 CFR § 1.17 (a) for the petition fee. If the enclosed fee is incorrect, please charge or credit our Deposit Account No. 50-1273 for the appropriate amount.

Respectfully submitted,

Brobeck, Phleger & Harrison LLP

Dated: 5/12/00

By Robert W. Prince

Robert W. Prince
Reg. No. 38,583

Brobeck, Phleger & Harrison LLP
12390 El Camino Real
San Diego, CA 92130-2081
Telephone: (858) 720-2500
Facsimile: (858) 720-2555

Application No. 09/095487

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- [X] 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to these regulations, published at 1114 OG 29, May 15, 1990 and at 55 FR 18230, May 1, 1990.
- [ ] 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- [ ] 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- [ ] 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
- [ ] 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- [X] 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- [X] 7. Other: please provide Seq ID #5-7

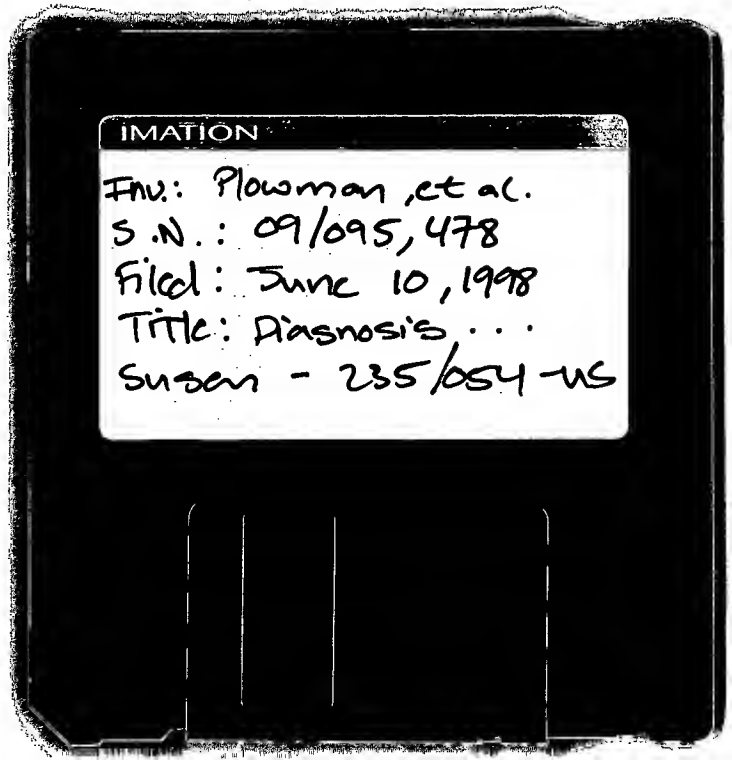
Applicant Must Provide:

- [X] An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- [X] An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- [X] A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216
For CRF Submission Help, call (703) 308-4212
For PatentIn software help, call (703) 308-6856

PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR RESPONSE


IMATION
Inv.: Plowman, et al.
S.N.: 09/095,478
Filed: June 10, 1998
Title: Diagnosis, . . .
Susan - 235/054-US

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: Gregory Plowman
Bahija Jallal

(ii) TITLE OF INVENTION: DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS

(iii) NUMBER OF SEQUENCES: 23

(iv) CORRESPONDENCE ADDRESS:

(A)	ADDRESSEE:	Brobeck, Phleger & Harrison LLP
(B)	STREET:	12390 El Camino Real
(C)	CITY:	San Diego
(D)	STATE:	California
(E)	COUNTRY:	U.S.A.
(F)	ZIP:	92130-2081

(v) COMPUTER READABLE FORM:

(A)	MEDIUM TYPE:	3.5" Diskette, 1.44 Mb storage
(B)	COMPUTER:	IBM Compatible
(C)	OPERATING SYSTEM:	IBM P.C. DOS 5.0
(D)	SOFTWARE:	FastSEQ for Windows 2.0

(vi) CURRENT APPLICATION DATA:

(A)	APPLICATION NUMBER:	09/095,478
(B)	FILING DATE:	June 10, 1998
(C)	CLASSIFICATION:	

(vii) PRIOR APPLICATION DATA:

(A)	APPLICATION NUMBER:	60/049,756
(B)	FILING DATE:	June 11, 1997

(A)	APPLICATION NUMBER:	
(B)	FILING DATE:	

(viii) ATTORNEY/AGENT INFORMATION:

(A)	NAME:	Warburg, Richard J.
(B)	REGISTRATION NUMBER:	32,327
(C)	REFERENCE/DOCKET NUMBER:	235/054

(ix) TELECOMMUNICATION INFORMATION:

(A)	TELEPHONE:	(858) 720-2500
(B)	TELEFAX:	(585) 720-2555
(C)	TELEX:	3760

(2) INFORMATION FOR SEQ ID NO: 1:

(i) SEQUENCE CHARACTERISTICS:

(A)	LENGTH:	1785 base pairs
(B)	TYPE:	nucleic acid
(C)	STRANDEDNESS:	single
(D)	TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

```
GGTTATGTCT GACTCACTGC ACTGGAGTTT GGCAAAAGCA TCTCAGAAGT GGTTGTGCTT     60
TTTTGAATGA AATGATCAAT GGAGTGCTCC AGTTGTATGC TGGCCTCTGG ATACTAACTA    120
GACCTGCCTG ACTCCAGGAA CTAAGGCTCA GTATCTGCAG AAGCTTTTTG CCCATCTCAT    180
TCCGGCTATG GGGACAACAT GTCTTCACCC AGGAAGGTTA GAGGAAAAAC TGGAAGAGAT    240
AATGATGAAG AGGAGGGTAA TTCAGGTAAC CTGAATCTCC GCAACTCTTT GCCTTCATCG    300
AGTCAGAAAA TGACGCCTAC GAAGCCGATT TTTGGGAATA AAATGAATTC AGAGAATGTA    360
AAACCCTCCC ATCACCTGTC ATTCTCAGAT AAGTATGAGC TTGTTTACCC AGAGCCTTTG    420
GAAAGTGACA CTGATGAGAC TGTGTGGGAT GTCAGTGACC GGTCTCTCAG AAACAGGTGG    480
AACAGTATGG ATTCAGAGAC TGCAGGGCCG TCAAAGACTG TCTCCCCAGT GCTTTCTGGT    540
AGTAGTAGGC TCTCAAAGGA CACTGAAACA TCTGTCTCTG AAAAGGAGCT AACTCAGTTG    600
GCTCAGATTC GACCATTAAT ATTCAACAGT TCTGCACGGT CTGCTATGCG GGATTGTTTG    660
AACACGCTTC AGAAAAAAGA AGAACTTGAT ATCATCCGTG AGTTTTTGGA GTTAGAACAA    720
ATGACTCTGC CTGATGACTT CAATTCTGGG AATACACTAC AGAACAGAGA TAAGAACAGA    780
TACCGAGATA TTCTTCCATA TGATTCAACA CGTGTTCCTC TTGGAAAAAA CAAGGACTAC    840
ATCAACGCTA GTTATATTAG AATAGTAAAT CATGAAGAAG AGTATTTTTA TATTGCCACT    900
CAAGGACCAT TGCCAGAAAC TATAGAAGAC TTTTGGCAAA TGGTTCTGGA AAATAATTGT    960
AATGTTATTG CTATGATAAC CAGAGAGATA GAATGTGGAG TTATCAAGTG TTACAGTTAC   1020
TGGCCCATTT CTCTGAAGGA GCCTTTGGAA TTCGAACACT TTAGTGTCTT TCTGGAGACC   1080
TTTCATGTAA CTCAATATTT CACCGTTCGA GTATTTCAGA TTGTGAAGAA GTCCACAGGA   1140
AAGAGCCAAT GTGTAAAACA CTTGCAGTTC ACCAAGTGGC CAGACCATGG CACTCCTGCC   1200
TCAGCAGATT TTTTCATAAA ATATGTCCGT TATGTGAGGA AGAGCCACAT TACAGGACCC   1260
CTCCTTGTTC ACTGCAGTGC TGGTGTAGGC CGAACAGGGG TGTTCATATG TGTGGATGTT   1320
GTGTTCTCTG CCATCGAGAA GAACTACTCT TTTGACATTA TGAACATAGT GACCCAGATG   1380
AGAAAGCAGC GCTGTGGCAT GATTCAAACC AAGGAGCAGT ACCAGTTTTG TTATGAAATT   1440
GTGCTTGAAG TTCTTCAGAA CCTTCTGGCT TTGTATTAAG AGAGACTTCT GCGCCTGTCC   1500
CTCGAGGTTA CCGAGCAGCT TGGAGCCTGA GCCGTGCTGA AGCGTCTGCG GGCCGTGCAG   1560
TCTGCCTTCT GATTTTTCTC TCTGAAAGTC CCTGAAGGTA GCACTACTGG GCACAGAGTG   1620
AACTGTTTCC ACTTGATCTT TCTGAACAAG AGCAAAATAC CCTCCATGCC TTCTACGGAA   1680
ACGGAAGTTG CATGAAACAA CCTCCGCTTG GCTGTCTGGT TTGTGGTATT ACAGAGCTTA   1740
ATAAAAGACT TAGATGTGAA AAAAAAAAAA AAAAAAAAAA AAAAA                    1785
```

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1896 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

GGTTATGTCT GACTCACTGC ACTGGAGTTT GGCAAAAGCA TCTCAGAAGT GGTTGTGCTT 60

TTTTGAATGA AATGATCAAT GGAGTGCTCC AGTTGTATGC TGGCCTCTGG ATACTAACTA 120
GACCTGCCTG ACTCCAGGAA CTAAGGCTCA GTATCTGCAG AAGCTTTTTG CCCATCTCAT 180
TCCGGCTATG GGGACAACAT GTCTTCACCC AGGAAGGTTA GAGGAAAAAC TGGAAGAGAT 240
AATGATGAAG AGGAGGGTAA TTCAGGTAAC CTGAATCTCC GCAACTCTTT GCCTTCATCG 300
AGTCAGAAAA TGACGCCTAC GAAGCCGGTA CAAAATAAAA ATCTCATGAA GTATGAAGAA 360
CACTTAGATA TATTGATGGT GTTTTTATTG ATAAAAACCA TATGGTATAA TGTCTTCAAA 420
TTATGGAAAG GCAAGCTTAT TTTTGGGAAT AAAATGAATT CAGAGAATGT AAAACCCTCC 480
CATCACCTGT CATTCTCAGA TAAGTATGAG CTTGTTTACC CAGAGCCTTT GGAAAGTGAC 540
ACTGATGAGA CTGTGTGGGA TGTCAGTGAC CGGTCTCTCA GAAACAGGTG GAACAGTATG 600
GATTCAGAGA CTGCAGGGCC GTCAAAGACT GTCTCCCCAG TGCTTTCTGG TAGTAGTAGG 660
CTCTCAAAGG ACACTGAAAC ATCTGTCTCT GAAAAGGAGC TAACTCAGTT GGCTCAGATT 720
CGACCATTAA TATTCAACAG TTCTGCACGG TCTGCTATGC GGGATTGTTT GAACACGCTT 780
CAGAAAAAAG AAGAACTTGA TATCATCCGT GAGTTTTTGG AGTTAGAACA AATGACTCTG 840
CCTGATGACT TCAATTCTGG GAATACACTA CAGAACAGAG ATAAGAACAG ATACCGAGAT 900
ATTCTTCCAT ATGATTCAAC ACGTGTTCCT CTTGGAAAAA ACAAGGACTA CATCAACGCT 960
AGTTATATTA GAATAGTAAA TCATGAAGAA GAGTATTTTT ATATTGCCAC TCAAGGACCA 1020
TTGCCAGAAA CTATAGAAGA CTTTTGGCAA ATGGTTCTGG AAAATAATTG TAATGTTATT 1080
GCTATGATAA CCAGAGAGAT AGAATGTGGA GTTATCAAGT GTTACAGTTA CTGGCCCATT 1140
TCTCTGAAGG AGCCTTTGGA ATTCGAACAC TTTAGTGTCT TTCTGGAGAC CTTTCATGTA 1200
ACTCAATATT TCACCGTTCG AGTATTTCAG ATTGTGAAGA AGTCCACAGG AAAGAGCCAA 1260
TGTGTAAAAC ACTTGCAGTT CACCAAGTGG CCAGACCATG GCACTCCTGC CTCAGCAGAT 1320
TTTTTCATAA AATATGTCCG TTATGTGAGG AAGAGCCACA TTACAGGACC CCTCCTTGTT 1380
CACTGCAGTG CTGGTGTAGG CCGAACAGGG GTGTTCATAT GTGTGGATGT TGTGTTCTCT 1440
GCCATCGAGA AGAACTACTC TTTTGACATT ATGAACATAG TGACCCAGAT GAGAAAGCAG 1500
CGCTGTGGCA TGATTCAAAC CAAGGAGCAG TACCAGTTTT GTTATGAAAT TGTGCTTGAA 1560
GTTCTTCAGA ACCTTCTGGC TTTGTATTAA GAGAGACTTC TGCGCCTGTC CCTCGAGGTT 1620
ACCGAGCAGC TTGGAGCCTG AGCCGTGCTG AAGCGTCTGC GGGCCGTGCA GTCTGCCTTC 1680
TGATTTTTCT CTCTGAAAGT CCCTGAAGGT AGCACTACTG GGCACAGAGT GAACTGTTTC 1740
CACTTGATCT TTCTGAACAA GAGCAAAATA CCCTCCATGC CTTCTACGGA AACGGAAGTT 1800
GCATGAAACA ACCTCCGCTT GGCTGTCTGG TTTGTGGTAT TACAGAGCTT AATAAAAGAC 1860
TTAGATGTGA AAAAAAAAAA AAAAAAAAAA AAAAAA 1896

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1692 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GGTTATGTCT GACTCACTGC ACTGGAGTTT GGCAAAAGCA TCTCAGAAGT GGTTGTGCTT 60

```
TTTTGAATGA AATGATCAAT GGAGTGCTCC AGTTGTATGC TGGCCTCTGG ATACTAACTA    120
GACCTGCCTG ACTCCAGGAA CTAAGGCTCA GTATCTGCAG AAGCTTTTTG CCCATCTCAT    180
TCCGGCTATG GGGACAACAT GTCTTCACCC AGGAAGGTTA GAGGAAAAAC TGGAAGAGAT    240
AATGATGAAG AGGAGGGTAA TTCAGGTAAC CTGAATCTCC GCAACTCTTT GCCTTCATCG    300
AGTCAGAAAA TGACGCCTAC GAAGCCGATT TTTGGGAATA AAATGAATTC AGAGAATGTA    360
AAACCCTCCC ATCACCTGTC ATTCTCAGAT AAGTATGAGC TTGTTTACCC AGAGCCTTTG    420
GAAAGTGACA CTGATGAGAC TGTGTGGGAT GTCAGTGACC GGTCTCTCAG AAACAGGTGG    480
AACAGTATGG ATTCAGAGAC TGCAGGGCCG TCAAAGACTG TCTCCCCAGT GCTTTCTGGT    540
AGTAGTAGGC TCTCAAAGGA CACTGAAACA TCTGTCTCTG AAAAGGAGCT AACTCAGTTG    600
GCTCAGATTC GACCATTAAT ATTCAACAGT TCTGCACGGT CTGCTATGCG GGATTGTTTG    660
AACACGCTTC AGAAAAAAGA AGAACTTGAT ATCATCCGTG AGTTTTTGGA GTTAGAACAA    720
ATGACTCTGC CTGATGACTT CAATTCTGGG AATACACTAC AGAACAGAGA TAAGAACAGA    780
TACCGAGATA TTCTTCCATA TGATTCAACA CGTGTTCCTC TTGGAAAAAA CAAGGACTAC    840
ATCAACGCTA GTTATATTAG AATAGTAAAT CATGAAGAAG AGTATTTTTA TATTGCCACT    900
CAAGGACCAT TGCCAGAAAC TATAGAAGAC TTTTGGCAAA TGGTTCTGGA AAATAATTGT    960
AATGTTATTG CTATGATAAC CAGAGAGATA GAATGTGGAG TTATCAAGTG TTACAGTTAC   1020

TGGCCCATTT CTCTGAAGGA GCCTTTGGAA TTCGAACACT TTAGTGTCTT TCTGGAGACC   1080
TTTCATGTAA CTCAATATTT CACCGTTCGA GTATTTCAGA TTGTGAAGAA GTCCACAGGA   1140
AAGAGCCAAT GTGTAAAACA CTTGCAGTTC ACCAAGTGGC CAGACCATGG CACTCCTGCC   1200
TCAGCAGATT TTTTCATAAA ATATGTCCGT TATGTGAGGA AGAGCCACAT TACAGGACCC   1260
CTCCTTGTTC ACTGCAGTGC TGGTGTAGGC CGAACAGGGG TGTTCATATG TGTGGATGTT   1320
GTGTTCTCTG CCATCGAGAA GAACTACTCT TTTGACATTA TGAACATAGT GACCCAGATG   1380
AGAAAGCAGC GCTGTGGCAT GATTCAAACC AAGGTTACCG AGCAGCTTGG AGCCTGAGCC   1440
GTGCTGAAGC GTCTGCGGGC CGTGCAGTCT GCCTTCTGAT TTTTCTCTCT GAAAGTCCCT   1500
GAAGGTAGCA CTACTGGGCA CAGAGTGAAC TGTTTCCACT TGATCTTTCT GAACAAGAGC   1560
AAAATACCCT CCATGCCTTC TACGGAAACG GAAGTTGCAT GAAACAACCT CCGCTTGGCT   1620
GTCTGGTTTG TGGTATTACA GAGCTTAATA AAAGACTTAG ATGTGAAAAA AAAAAAAAAA   1680
AAAAAAAAAA AA                                                       1692
```

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

(A)	LENGTH:	320 base pairs
(B)	TYPE:	nucleic acid
(C)	STRANDEDNESS:	single
(D)	TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

```
GAAAATAATT GTAATGTTAT TGCTATGATA ACCAGAGAGA TAGAAGGTGG AGTTATCAAG     60
TGTTGCAGTT ACTGGCCCGT TTCTCTGAAG GAGCCTTTGG AATTCAAACA CTTTCATGTC    120
CTTCTGGAGA ACTTTCAGAT AACTCAGTAT TTTGTCATCC GAATATTTCA AATTGTGAAG    180
AAGTCCACAG GAAAGAGTCA CTCTGTAAAA CACTTGCAGT TCATCAAATG GCCAGACCAT    240
GGCACTCCTG CCTCAGTAGA TTTTTTCATC AAATATGTCC GTTATGTGAG GAAGAGCCAC    300
ATTACAGGAC CCCTCCTTGT                                                320
```

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

(A)	LENGTH:	426 amino acids

(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

```
Met Ser Ser Pro Arg Lys Val Arg Gly Lys Thr Gly Arg Asp Asn Asp
 1               5                  10                  15

Glu Glu Glu Gly Asn Ser Gly Asn Leu Asn Leu Arg Asn Ser Leu Pro
            20                  25                  30

Ser Ser Ser Gln Lys Met Thr Pro Thr Lys Pro Ile Phe Gly Asn Lys
        35                  40                  45

Met Asn Ser Glu Asn Val Lys Pro Ser His His Leu Ser Phe Ser Asp
    50                  55                  60

Lys Tyr Glu Leu Val Tyr Pro Glu Pro Leu Glu Ser Asp Thr Asp Glu
65                  70                  75                  80

Thr Val Trp Asp Val Ser Asp Arg Ser Leu Arg Asn Arg Trp Asn Ser
                85                  90                  95

Met Asp Ser Glu Thr Ala Gly Pro Ser Lys Thr Val Ser Pro Val Leu
            100                 105                 110

Ser Gly Ser Ser Arg Leu Ser Lys Asp Thr Glu Thr Ser Val Ser Glu
        115                 120                 125

Lys Glu Leu Thr Gln Leu Ala Gln Ile Arg Pro Leu Ile Phe Asn Ser
    130                 135                 140

Ser Ala Arg Ser Ala Met Arg Asp Cys Leu Asn Thr Leu Gln Lys Lys
145                 150                 155                 160

Glu Glu Leu Asp Ile Ile Arg Glu Phe Leu Glu Leu Glu Gln Met Thr
                165                 170                 175

Leu Pro Asp Asp Phe Asn Ser Gly Asn Thr Leu Gln Asn Arg Asp Lys
            180                 185                 190

Asn Arg Tyr Arg Asp Ile Leu Pro Tyr Asp Ser Thr Arg Val Pro Leu
        195                 200                 205

Gly Lys Asn Lys Asp Tyr Ile Asn Ala Ser Tyr Ile Arg Ile Val Asn
    210                 215                 220

His Glu Glu Glu Tyr Phe Tyr Ile Ala Thr Gln Gly Pro Leu Pro Glu
225                 230                 235                 240

Thr Ile Glu Asp Phe Trp Gln Met Val Leu Glu Asn Asn Cys Asn Val
                245                 250                 255

Ile Ala Met Ile Thr Arg Glu Ile Glu Cys Gly Val Ile Lys Cys Tyr
```

```
            260                 265                 270

Ser Tyr Trp Pro Ile Ser Leu Lys Glu Pro Leu Glu Phe Glu His Phe
        275                 280                 285

Ser Val Phe Leu Glu Thr Phe His Val Thr Gln Tyr Phe Thr Val Arg
    290                 295                 300

Val Phe Gln Ile Val Lys Lys Ser Thr Gly Lys Ser Gln Cys Val Lys
305                 310                 315                 320

His Leu Gln Phe Thr Lys Trp Pro Asp His Gly Thr Pro Ala Ser Ala
                325                 330                 335

Asp Phe Phe Ile Lys Tyr Val Arg Tyr Val Arg Lys Ser His Ile Thr
            340                 345                 350

Gly Pro Leu Leu Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Val
        355                 360                 365

Phe Ile Cys Val Asp Val Val Phe Ser Ala Ile Glu Lys Asn Tyr Ser
    370                 375                 380

Phe Asp Ile Met Asn Ile Val Thr Gln Met Arg Lys Gln Arg Cys Gly
385                 390                 395                 400

Met Ile Gln Thr Lys Glu Gln Tyr Gln Phe Cys Tyr Glu Ile Val Leu
                405                 410                 415

Glu Val Leu Gln Asn Leu Leu Ala Leu Tyr
            420                 425
```

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

(A)	LENGTH:	463 amino acids
(B)	TYPE:	amino acid
(C)	STRANDEDNESS:	single
(D)	TOPOLOGY:	linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

```
Met Ser Ser Pro Arg Lys Val Arg Gly Lys Thr Gly Arg Asp Asn Asp
 1               5                  10                  15

Glu Glu Glu Gly Asn Ser Gly Asn Leu Asn Leu Arg Asn Ser Leu Pro
            20                  25                  30

Ser Ser Ser Gln Lys Met Thr Pro Thr Lys Pro Val Gln Asn Lys Asn
        35                  40                  45

Leu Met Lys Tyr Glu Glu His Leu Asp Ile Leu Met Val Phe Leu Leu
```

```
    50                  55                  60

Ile Lys Thr Ile Trp Tyr Asn Val Phe Lys Leu Trp Lys Gly Lys Leu
65                  70                  75                  80

Ile Phe Gly Asn Lys Met Asn Ser Glu Asn Val Lys Pro Ser His His
                85                  90                  95

Leu Ser Phe Ser Asp Lys Tyr Glu Leu Val Tyr Pro Glu Pro Leu Glu
            100                 105                 110

Ser Asp Thr Asp Glu Thr Val Trp Asp Val Ser Asp Arg Ser Leu Arg
        115                 120                 125

Asn Arg Trp Asn Ser Met Asp Ser Glu Thr Ala Gly Pro Ser Lys Thr
    130                 135                 140

Val Ser Pro Val Leu Ser Gly Ser Ser Arg Leu Ser Lys Asp Thr Glu
145                 150                 155                 160

Thr Ser Val Ser Glu Lys Glu Leu Thr Gln Leu Ala Gln Ile Arg Pro
                165                 170                 175

Leu Ile Phe Asn Ser Ser Ala Arg Ser Ala Met Arg Asp Cys Leu Asn
            180                 185                 190

Thr Leu Gln Lys Lys Glu Glu Leu Asp Ile Ile Arg Glu Phe Leu Glu
        195                 200                 205

Leu Glu Gln Met Thr Leu Pro Asp Asp Phe Asn Ser Gly Asn Thr Leu
    210                 215                 220

Gln Asn Arg Asp Lys Asn Arg Tyr Arg Asp Ile Leu Pro Tyr Asp Ser
225                 230                 235                 240

Thr Arg Val Pro Leu Gly Lys Asn Lys Asp Tyr Ile Asn Ala Ser Tyr
                245                 250                 255

Ile Arg Ile Val Asn His Glu Glu Glu Tyr Phe Tyr Ile Ala Thr Gln
            260                 265                 270

Gly Pro Leu Pro Glu Thr Ile Glu Asp Phe Trp Gln Met Val Leu Glu
        275                 280                 285

Asn Asn Cys Asn Val Ile Ala Met Ile Thr Arg Glu Ile Glu Cys Gly
    290                 295                 300

Val Ile Lys Cys Tyr Ser Tyr Trp Pro Ile Ser Leu Lys Glu Pro Leu
305                 310                 315                 320

Glu Phe Glu His Phe Ser Val Phe Leu Glu Thr Phe His Val Thr Gln
                325                 330                 335

Tyr Phe Thr Val Arg Val Phe Gln Ile Val Lys Lys Ser Thr Gly Lys
            340                 345                 350

Ser Gln Cys Val Lys His Leu Gln Phe Thr Lys Trp Pro Asp His Gly
```

```
        355                 360                 365

Thr Pro Ala Ser Ala Asp Phe Phe Ile Lys Tyr Val Arg Tyr Val Arg
    370                 375                 380

Lys Ser His Ile Thr Gly Pro Leu Leu Val His Cys Ser Ala Gly Val
385                 390                 395                 400

Gly Arg Thr Gly Val Phe Ile Cys Val Asp Val Val Phe Ser Ala Ile
                405                 410                 415

Glu Lys Asn Tyr Ser Phe Asp Ile Met Asn Ile Val Thr Gln Met Arg
            420                 425                 430

Lys Gln Arg Cys Gly Met Ile Gln Thr Lys Glu Gln Tyr Gln Phe Cys
        435                 440                 445

Tyr Glu Ile Val Leu Glu Val Leu Gln Asn Leu Leu Ala Leu Tyr
    450                 455                 460
```

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 405 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

```
Met Ser Ser Pro Arg Lys Val Arg Gly Lys Thr Gly Arg Asp Asn Asp
 1               5                  10                  15

Glu Glu Glu Gly Asn Ser Gly Asn Leu Asn Leu Arg Asn Ser Leu Pro
            20                  25                  30

Ser Ser Ser Gln Lys Met Thr Pro Thr Lys Pro Ile Phe Gly Asn Lys
        35                  40                  45

Met Asn Ser Glu Asn Val Lys Pro Ser His His Leu Ser Phe Ser Asp
    50                  55                  60

Lys Tyr Glu Leu Val Tyr Pro Glu Pro Leu Glu Ser Asp Thr Asp Glu
65                  70                  75                  80

Thr Val Trp Asp Val Ser Asp Arg Ser Leu Arg Asn Arg Trp Asn Ser
                85                  90                  95

Met Asp Ser Glu Thr Ala Gly Pro Ser Lys Thr Val Ser Pro Val Leu
            100                 105                 110

Ser Gly Ser Ser Arg Leu Ser Lys Asp Thr Glu Thr Ser Val Ser Glu
```

```
        115                 120                 125

Lys Glu Leu Thr Gln Leu Ala Gln Ile Arg Pro Leu Ile Phe Asn Ser
    130                 135                 140

Ser Ala Arg Ser Ala Met Arg Asp Cys Leu Asn Thr Leu Gln Lys Lys
145                 150                 155                 160

Glu Glu Leu Asp Ile Ile Arg Glu Phe Leu Glu Leu Glu Gln Met Thr
                165                 170                 175

Leu Pro Asp Asp Phe Asn Ser Gly Asn Thr Leu Gln Asn Arg Asp Lys
            180                 185                 190

Asn Arg Tyr Arg Asp Ile Leu Pro Tyr Asp Ser Thr Arg Val Pro Leu
        195                 200                 205

Gly Lys Asn Lys Asp Tyr Ile Asn Ala Ser Tyr Ile Arg Ile Val Asn
    210                 215                 220

His Glu Glu Glu Tyr Phe Tyr Ile Ala Thr Gln Gly Pro Leu Pro Glu
225                 230                 235                 240

Thr Ile Glu Asp Phe Trp Gln Met Val Leu Glu Asn Asn Cys Asn Val
                245                 250                 255

Ile Ala Met Ile Thr Arg Glu Ile Glu Cys Gly Val Ile Lys Cys Tyr
            260                 265                 270

Ser Tyr Trp Pro Ile Ser Leu Lys Glu Pro Leu Glu Phe Glu His Phe
        275                 280                 285

Ser Val Phe Leu Glu Thr Phe His Val Thr Gln Tyr Phe Thr Val Arg
    290                 295                 300

Val Phe Gln Ile Val Lys Lys Ser Thr Gly Lys Ser Gln Cys Val Lys
305                 310                 315                 320

His Leu Gln Phe Thr Lys Trp Pro Asp His Gly Thr Pro Ala Ser Ala
                325                 330                 335

Asp Phe Phe Ile Lys Tyr Val Arg Tyr Val Arg Lys Ser His Ile Thr
            340                 345                 350

Gly Pro Leu Leu Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Val
        355                 360                 365

Phe Ile Cys Val Asp Val Val Phe Ser Ala Ile Glu Lys Asn Tyr Ser
    370                 375                 380

Phe Asp Ile Met Asn Ile Val Thr Gln Met Arg Lys Gln Arg Cys Gly
385                 390                 395                 400

Met Ile Gln Thr Lys
                405
```

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 122 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

```
Asp Phe Trp Gly Met Met Trp Glu Asn Asn Cys Asn Val Ile Ala Met
 1               5                  10                  15

Ile Thr Arg Glu Ile Glu Gly Gly Val Ile Lys Cys Cys Ser Tyr Trp
            20                  25                  30

Pro Val Ser Leu Lys Glu Pro Leu Glu Phe Lys His Phe His Val Leu
        35                  40                  45

Leu Glu Asn Phe Gln Ile Thr Gln Tyr Phe Val Ile Arg Ile Phe Gln
    50                  55                  60

Ile Val Lys Lys Ser Thr Gly Lys Ser His Ser Val Lys His Leu Gln
65                  70                  75                  80

Phe Ile Lys Trp Pro Asp His Gly Thr Pro Ala Ser Val Asp Phe Phe
                85                  90                  95

Ile Lys Tyr Val Arg Tyr Val Arg Lys Ser His Ile Thr Gly Pro Leu
            100                 105                 110

Leu Val His Cys Thr Ala Gly Val Gly Arg
        115                 120
```

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 23 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ix) FEATURE:

(D) OTHER INFORMATION: The letter "Y" stands for C or T.

The letter "V" stands for A, C or G.
The letter "R" stands for A or G.
The letter "N" stands for A, C, G

or T.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

GAYTTYTGGV RNATGRTNTG GGA 23

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 23 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ix) FEATURE:

(D) OTHER INFORMATION: The letter "S" stands for C or G.
The letter "Y" stands for C or T.
The letter "N" stands for A, C, G or T.
The letter "W" stands for A or T.
The letter "R" stands for A or G.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

CGGCCSAYNC CNGCNSWRCA RTG 23

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 8 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ix) FEATURE:

(D) OTHER INFORMATION: "Xaa" in positions 4 and 6 stand for an unspecified amino acid. "Xaa" in position 8 stands for either Glu or Asp.

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Asp Phe Trp Xaa Met Xaa Trp Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 7 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(D) OTHER INFORMATION: "Xaa" in positions 3 and 6 stand for an unspecified amino acid.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

His Cys Xaa Ala Gly Xaa Gly
1 5

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 34 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

CACCGTTCGA GTATTTCAGA TTGTGAAGAA GTCC 34

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 34 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GGACTTCTTC ACAATCTGAA ATACTCGAAC GGTG 34

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

(A)	LENGTH:	33 base pairs
(B)	TYPE:	nucleic acid
(C)	STRANDEDNESS:	single
(D)	TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

CCGTTATGTG AGGAAGAGCC ACATTACAGG ACC 33

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

(A)	LENGTH:	33 base pairs
(B)	TYPE:	nucleic acid
(C)	STRANDEDNESS:	single
(D)	TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

GGTCCTGTAA TGTGGCTCTT CCTCACATAA CGG 33

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

(A)	LENGTH:	34 base pairs
(B)	TYPE:	nucleic acid
(C)	STRANDEDNESS:	single
(D)	TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

CACCGTTCGA GTATTTCAGA TTGTGAAGAA GTCC 34

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

(A)	LENGTH:	33 base pairs
(B)	TYPE:	nucleic acid
(C)	STRANDEDNESS:	single
(D)	TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

GGTCCTGTAA TGTGGCTCTT CCTCACATAA CGG 33

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser
1 5 10

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

His Cys Ser Ala Gly
1 5

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 29 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Met Ser Ser Pro Arg Lys Val Arg Gly Lys Thr Gly Arg Asp Asn Asp
1 5 10 15

Glu Glu Glu Gly Asn Ser Gly Asn Leu Asn Leu Arg Asn
20 25

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 29 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Ser Pro Val Leu Ser Gly Ser Ser Arg Leu Ser Lys Asp Thr Glu Thr
1 5 10 15

Ser Val Ser Glu Lys Glu Leu Thr Gln Leu Ala Gln Ile
20 25

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 29 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Trp Asp Val Ser Asp Arg Ser Leu Arg Asn Arg Trp Asn Ser Met Asp
1 5 10 15

Ser Glu Thr Ala Gly Pro Ser Lys Thr Val Ser Pro Val
20 25
110

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Group Art Unit: 1642
Gregory Plowman, et al.	Examiner: Lin Sun-Hoffman
Serial No. 09/095,478	
Filed: June 10, 1998	
For: **DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS**	

PETITION FOR EXTENSION OF TIME

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Pursuant to 37 C.F. R. § 1.136, Applicant hereby petitions for a three-month extension of time to respond to the Office Action mailed January 20, 2000. This extension is effective to allow the timely filing of a response up to and including May 20, 2000.

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being hand delivered on the date shown below to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Ruth Saskowski
Name of Person Delivering Paper

May 12, 2000
Date of Delivery

Signature of Person Delivering Paper

Enclosed is a check in the amount of $870.00 to cover the fees associated with this Petition. If the enclosed fee is incorrect, please charge or credit our Deposit Account No. 50-1273 for the appropriate amount.

Respectfully submitted,

Brobeck, Phleger & Harrison LLP

Dated: 5/12/00

By _____
Michael A. Whittaker
Reg. No. 46,230

BROBECK, PHLEGER & HARRISON LLP
12390 El Camino Real
San Diego, CA 92130-2081
Telephone: (858) 720-2500
Facsimile: (858) 720-2555

Atty. Dkt. No. 038602/0393

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gregory D. PLOWMAN et al.

Title: DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS

Appl. No.: 09/095,478

Filing Date: 06/10/1998

Examiner: L. Sun-Hoffman

Art Unit: 1642

CHANGE OF CORRESPONDENCE ADDRESS

Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicant's attorney respectfully requests that the records of the United States Patent and Trademark Office in connection with the above-identified application be changed to show the following address and telephone number for all future communications.

Beth A. Burrous
Foley & Lardner
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5109

Telephone: (202) 672-5475
Facsimile: (202) 672-5399

Respectfully submitted,

Date May 14, 2001

By _____

FOLEY & LARDNER
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5109
Telephone: (202) 672-5475
Facsimile: (202) 672-5399

Beth A. Burrous
Attorney for Applicant
Registration No. 35,087

Atty. Dkt. No. 038602/0393

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gregory D. PLOWMAN et al.

Title: DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS

Appl. No.: 09/095,478

Filing Date: 06/10/1998

Examiner: L. Sun-Hoffman

Art Unit: 1642

STATUS INQUIRY

Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicants respectfully request to be advised of the status of the above captioned application. The last communication in this application was an Office Action dated January 20, 2000, to which a Response was filed on May 12, 2000.

Respectfully submitted,

Date May 14, 2001

By _____

FOLEY & LARDNER
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5109
Telephone: (202) 672-5475
Facsimile: (202) 672-5399

Beth A. Burrous
Attorney for Applicant
Registration No. 35,087

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No.:038602/0393

Applicant:	Plowman et al.
Appl. No.:	09/095,478
Filing Date:	June 10, 1998
Examiner:	L. Sun-Hoffman
Art Unit:	1642
Title:	DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS

REVOCATION OF PRIOR POWERS OF ATTORNEY AND APPOINTMENT OF NEW POWER OF ATTORNEY BY ASSIGNEE CHANGE OF CORRESPONDENCE ADDRESS

Commissioner for Patents
Washington, D.C. 20231

Sir:

SUGEN, Inc. is the assignee of Application No.: 09/095,478, filed June 10, 1998 and all continuing applications thereof, as evidenced by an Assignment recorded in the U.S. Patent and Trademark Office on November 16, 1998 at reel/frame 9592/0970.

SUGEN Inc., through its duly-delegated representative, hereby revokes all prior Powers of Attorney submitted in this application, and hereby appoints the following registered attorneys and agents of the law firm of FOLEY & LARDNER:

STEPHEN A. BENT	Reg. No. 29,768
DAVID A. BLUMENTHAL	Reg. No. 26,257
BETH A. BURROUS	Reg. No. 35,087
ALAN I. CANTOR	Reg. No. 28,163
WILLIAM T. ELLIS	Reg. No. 26,874
JOHN J. FELDHAUS	Reg. No. 28,822
MICHAEL D. KAMINSKI	Reg. No. 32,904
LYLE K. KIMMS	Reg. No. 34,079
KENNETH E. KROSIN	Reg. No. 25,735
JOHNNY A. KUMAR	Reg. No. 34,649
GLENN LAW	Reg. No. 34,371
PETER G. MACK	Reg. No. 26,001

Atty. Dkt. No. 038602/0393

STEPHEN B. MAEBIUS	Reg. No. 35,264
BRIAN J. MC NAMARA	Reg. No. 32,789
SYBIL MELOY	Reg. No. 22,749
RICHARD C. PEET	Reg. No. 35,792
GEORGE E. QUILLIN	Reg. No. 32,792
ANDREW E. RAWLINS	Reg. No. 34,703
BERNHARD D. SAXE	Reg. No. 28,665
CHARLES F. SCHILL	Reg. No. 27,590
RICHARD L. SCHWAAB	Reg. No. 25,479
ARTHUR SCHWARTZ	Reg. No. 22,115
MICHELE SIMKIN	Reg. No. 34,717
HAROLD C. WEGNER	Reg. No. 25,258

and the following additional attorneys: Rekha Bansal, Reg. No. 36,440 and Leslie Ann Mooi, Reg. No. 37,047; as its principal attorneys to have full power to prosecute this application and any continuations, divisions, reissues, and reexaminations thereof, to receive the patent, to transact all business in the United States Patent and Trademark Office connected therewith, and to have full power of substitution, association, and revocation, including the power to revoke the power of attorney of any associate attorney.

Please direct all future correspondence concerning this application to:

Beth A. Burrous

FOLEY & LARDNER
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5109

Telephone: (202) 672-5300
Facsimile: (202) 672-5399

Executed this 8th day of May, 2001.

SUGEN Inc.:

By: _____
(Signature)

GERALD McMAHON
(Printed Name)

Senior Vice President, Discovery
(Title)